United States Army

Logistics Transformation Agency

Common Logistics Operating Environment (CLOE)

Welcome to the CLOE Technical Demonstration

What The Display Covers

- **Overview of the G4's Initiative to Implement a Common Logistics Operating Environment (CLOE)**
- **Purpose of the CLOE Technical Demonstration**
- **Operational Architecture for the CLOE Technical Demonstration**

What is the Common Logistics Operating Environment?

- **A Process For Synchronizing And Integrating Doctrine And Technology**
  - **Equipment Health Management**
  - **Condition-Based Maintenance**
  - **Anticipatory Sustainment**
- **The Evolving Operational Architecture That Enables Sustainment Interoperability On The Battlefield**
- **A Program That Assures Key Sustainment Enablers Are Fielded On Platforms And In Supporting Systems**

CLOE is Army Policy

- **Assistant Secretary of the Army (ALT) signed CLOE Policy Memo 25 Jul 03. "The Army will employ a CLOE to capture, store, retrieve, and utilize logistics data from battlefield operating systems…. The G-4 will lead, coordinate, and implement CLOE."**
- **Policy Directs:**
  - **Requirements**
    - **Define requirements for sensor-based, Self-monitoring, Self-reporting Platforms**
    - **Assure Commonality & Interoperability in support of OF sustainment**
  - **Processes**
    - **Employ an On-Board Health Management System**
    - **Build tactical platform-level Logistics Business Processes**
    - **Link platform health monitoring capabilities to Enterprise Processes**
  - **Standards, Specs, Protocols**
    - **Provide guidance and Configuration Management for PEOs/PMs**
  - **Data Management**
    - **Provide Platform Technical Data to acquisition and sustainment communities**
    - **Capture, store, retrieve, and utilize Logistics Data from battlefield operating systems**

CLOE Program Execution

1. CLOE Strategy Paper
- Developed by LTA & G-4

2. CLOE Campaign Plan
- High-Level Overview
- Reviewed Annually
- Signed by G-4

3. Army Asst Sec. of Acquisition Policy Memo

4. Management Plan
- GOSC Structure
- Roles & Responsibilities
- CCB Process
- Program Management
- Enforcement

5. Implementation Plan
- Guidance for PMs
- Follows EI Template
- Migration of Current Force
- Migration to OF
- CLOE SIL
- Tests, Demonstrations and Other Risk Mitigation Activities

6. Architecture Plans
- Establish Standards & Commonality
- Updated During Each Phase of Transformation
- Embedded Diagnostic Baseline
- Logistics CONOPS for Each Force Element

CLOE* Integrates Enablers to Accelerate *Logistics Transformation

Purpose of CLOE Technical Demonstration

- **Demonstrate technical feasibility of the synchronization of multiple concepts and the integration of platform, communications, & log enablers**
  - **Identify and fix doctrine and technical gaps to self-reporting/diagnosing platforms in the current fleet**
  - **Demonstrate Log Enablers for the SBCT Mission & Doctrine**
  - **Address Current Force interoperability**
- **Develop the initial Operational Architecture for the Common Logistics Operating Environment (CLOE)**
- **Lay the groundwork for integrating FCS & non-FCS force support on the same battlefield**

Participants

- **Army Organizations**
  - **LTA (Lead) – PM TMDE**
  - **PM BCT – PM LIS**
  - **PM FBCB2 – PM HTV**
  - **PM MTS – PM MTV**
  - **PM LTV – TACOM**
  - **NAC**
- **Developers**
  - **PNNL – LMI**
  - **IBM – ComTech**
  - **GDLS – ICRC**
  - **Northrup Grumman – DriverTech**
  - **SAIC – CSC**
  - **O'Neil Associates**

The Demonstration is a Major Integration Challenge

Synchronized Concepts

Platform/Maintenance
- 2-Level Maintenance
- Advanced/Combat Maintainer
- ED/EP - Condition-Based/Predictive Maintenance

COMMS
- Combat Status-Situational Understanding
- MRLN

LOG
- TLDD
- Anticipatory Logistics
- AIT

Integrated Enablers

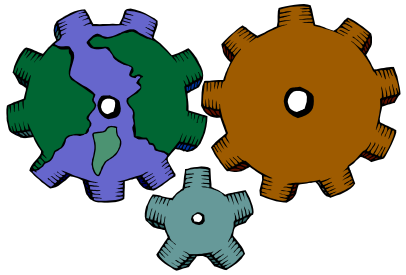
Platform Enablers
- Health Check/PMM
- Embedded IETM
- Remote Diagnostics
- DPMCS/Logbook
- HMMWV Analog Conversions

COMMs Enablers
- FBCB2 - Combat Power
- MTS – Blue Force Tracking

LOG Enablers
- ETM-I
- Monitor on the Move
- AIT– RF Tag & Serial Number Tracking
- CAISI

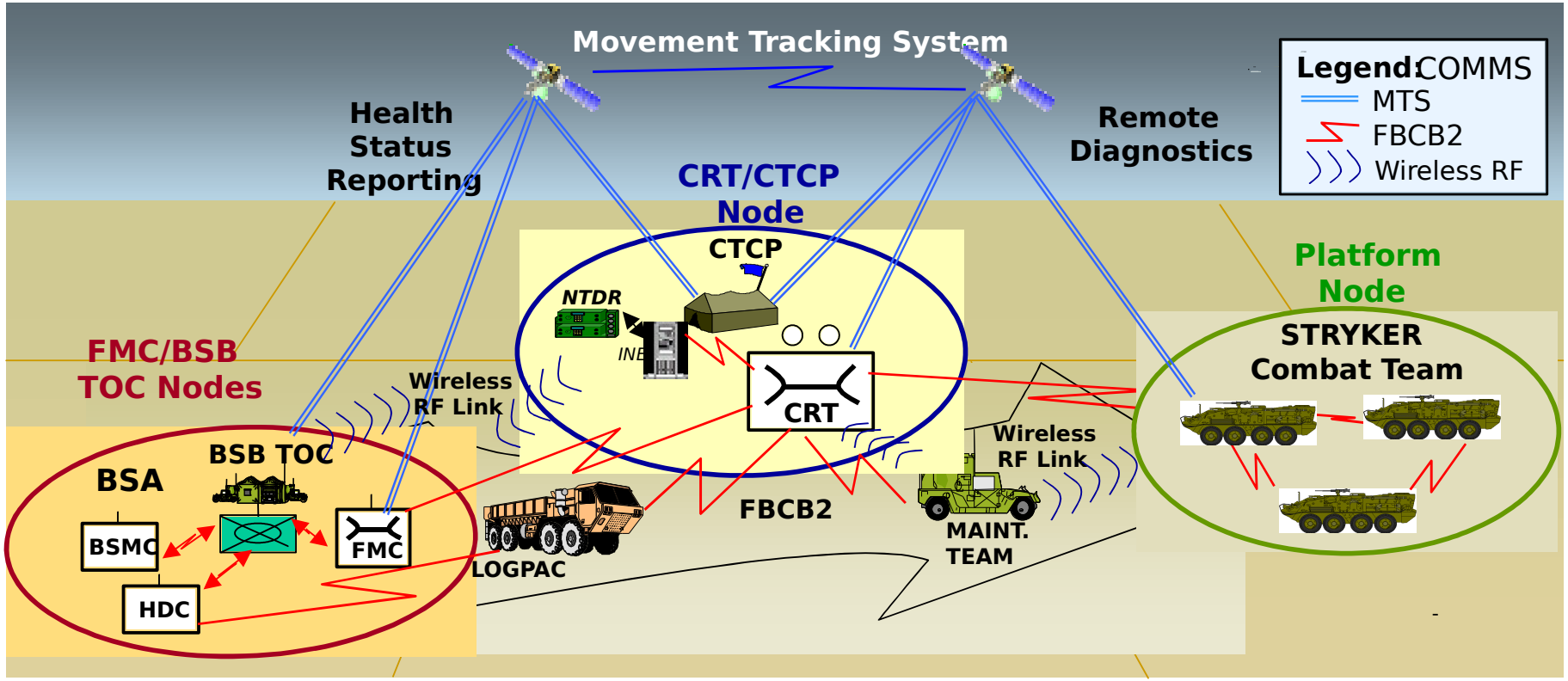
Doctrine/Policy

- Force Structure
- O&O/CSS FMs
- Business Processes
- AR 750-1



Operating Concept Overview

Self-diagnosing, self reporting platforms generating actionable information



A Walk Through Some Demo Operating Scenarios

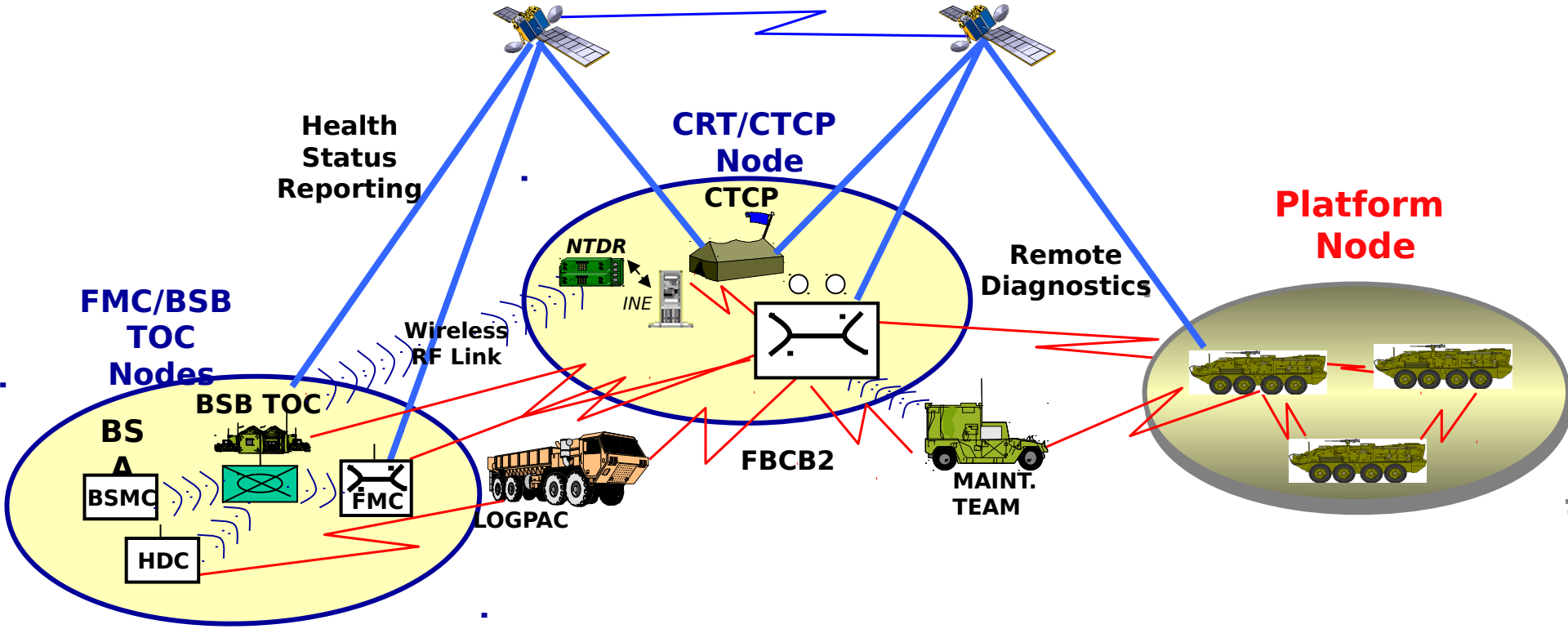
- **Automated Status Reporting Over FBCB2**
- **Fault Reporting on Stryker**
- **Tactical Wheeled Vehicles Reporting on MTS**
- **Predicted Maintenance Need**

Next Operating Scenario
Discussion Begins at 1300

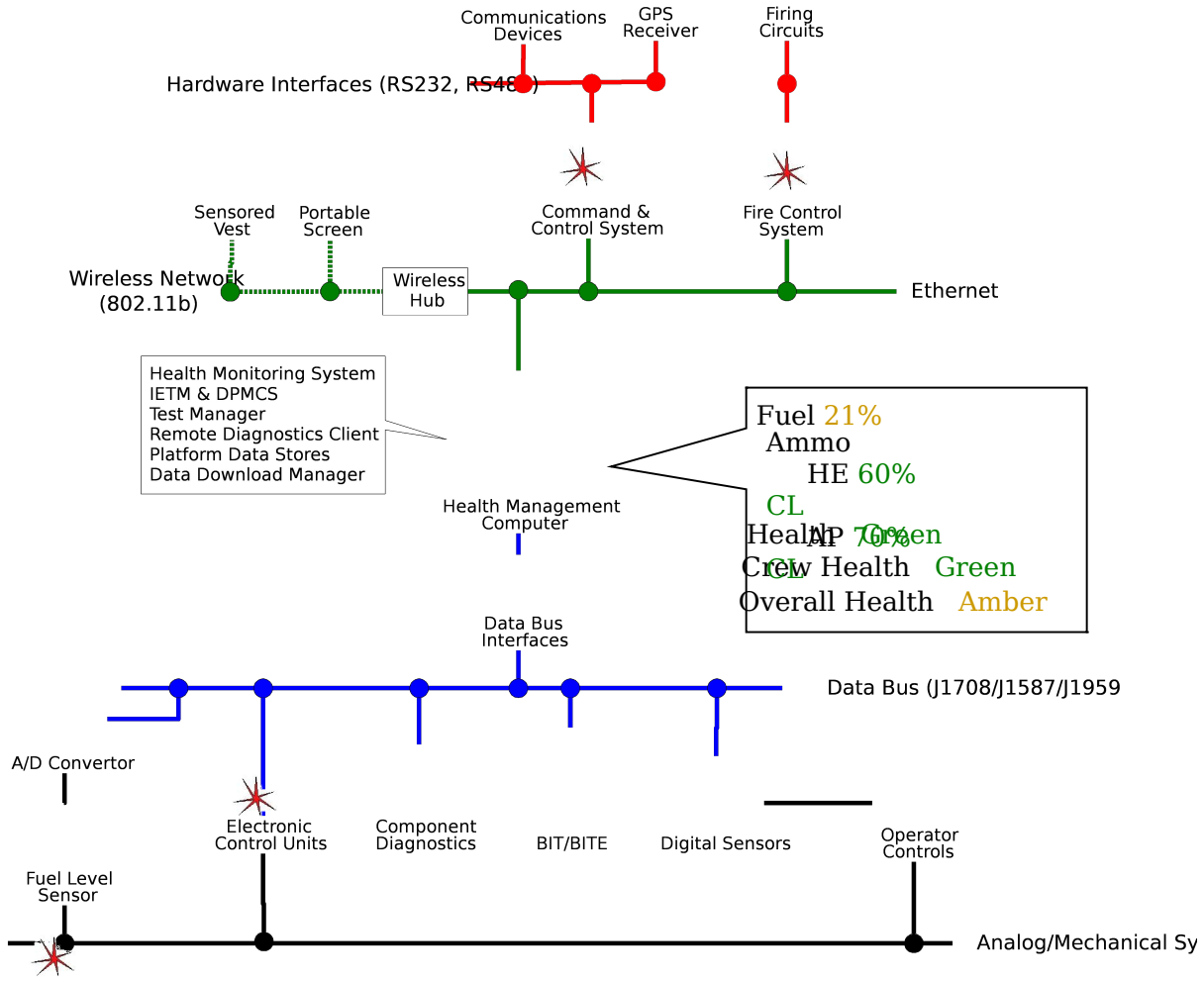
Overview of Automated Status Reporting Scenario

- **Platforms Automatically Report Status**
  - **Position – Lat/Long**
  - **Overall Status** 
  - **Fuel Level -% Remaining**
  - **Ammo Level by Type – % Combat Load Remaining**
  - **Platform Health** 
  - **Crew Health** 
- **MTS and FBCB2 Reports Merged in Combat Status View of FBCB2**
- **FBCB2 Users Can Roll Up/Drill Down By Task Organization to Support Operational and Logistics Planning**

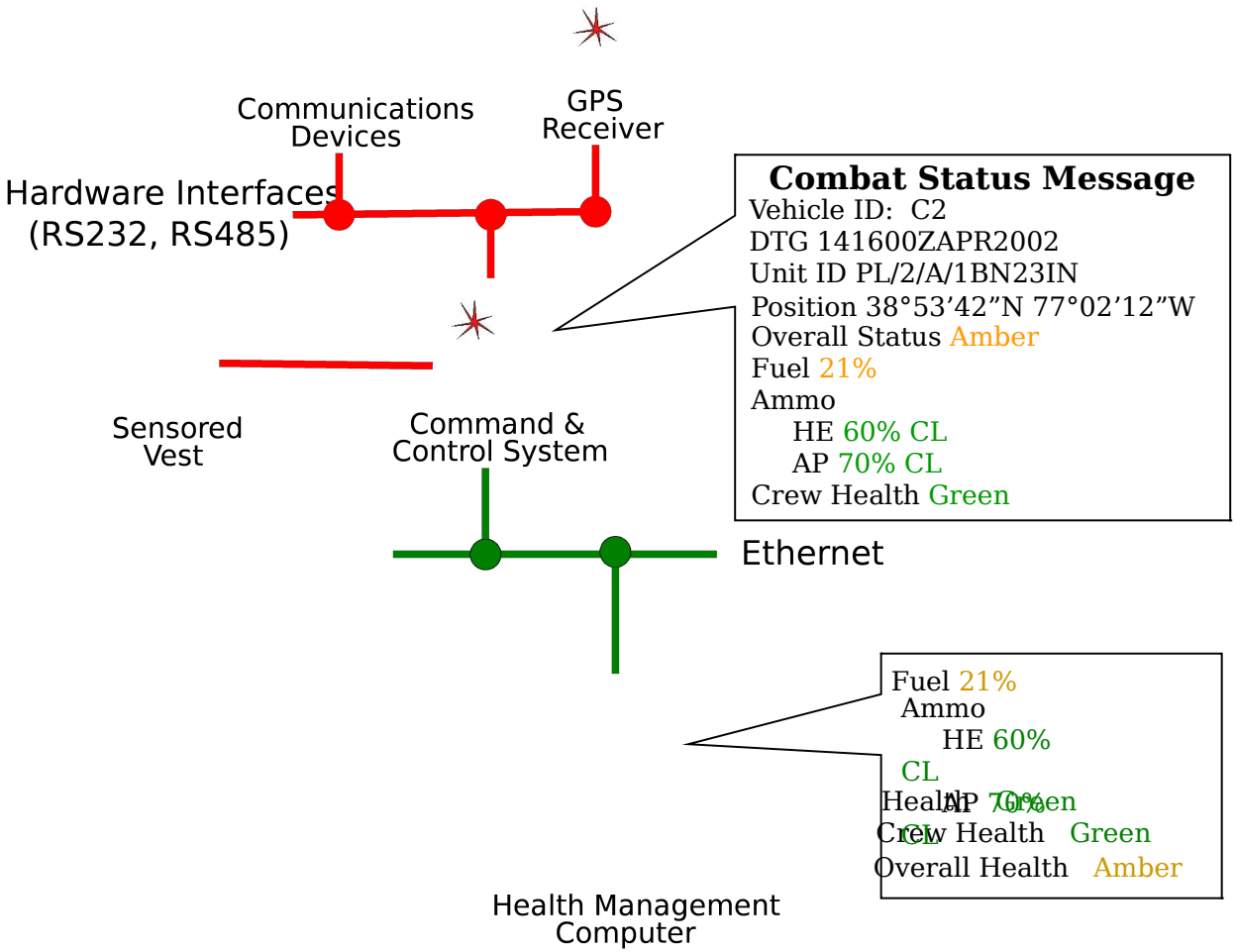
Generating Automated Status Reports



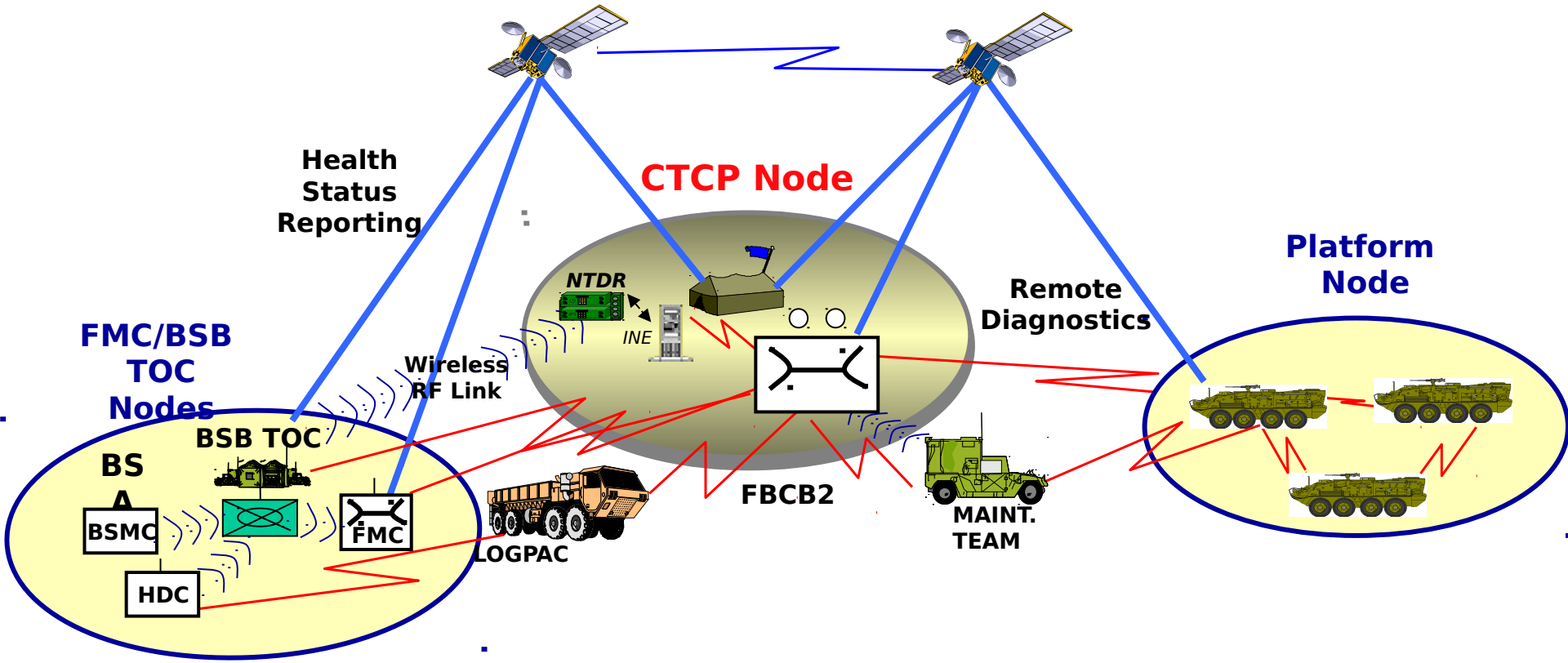
Capturing Status Data



Creating Automated Status Report

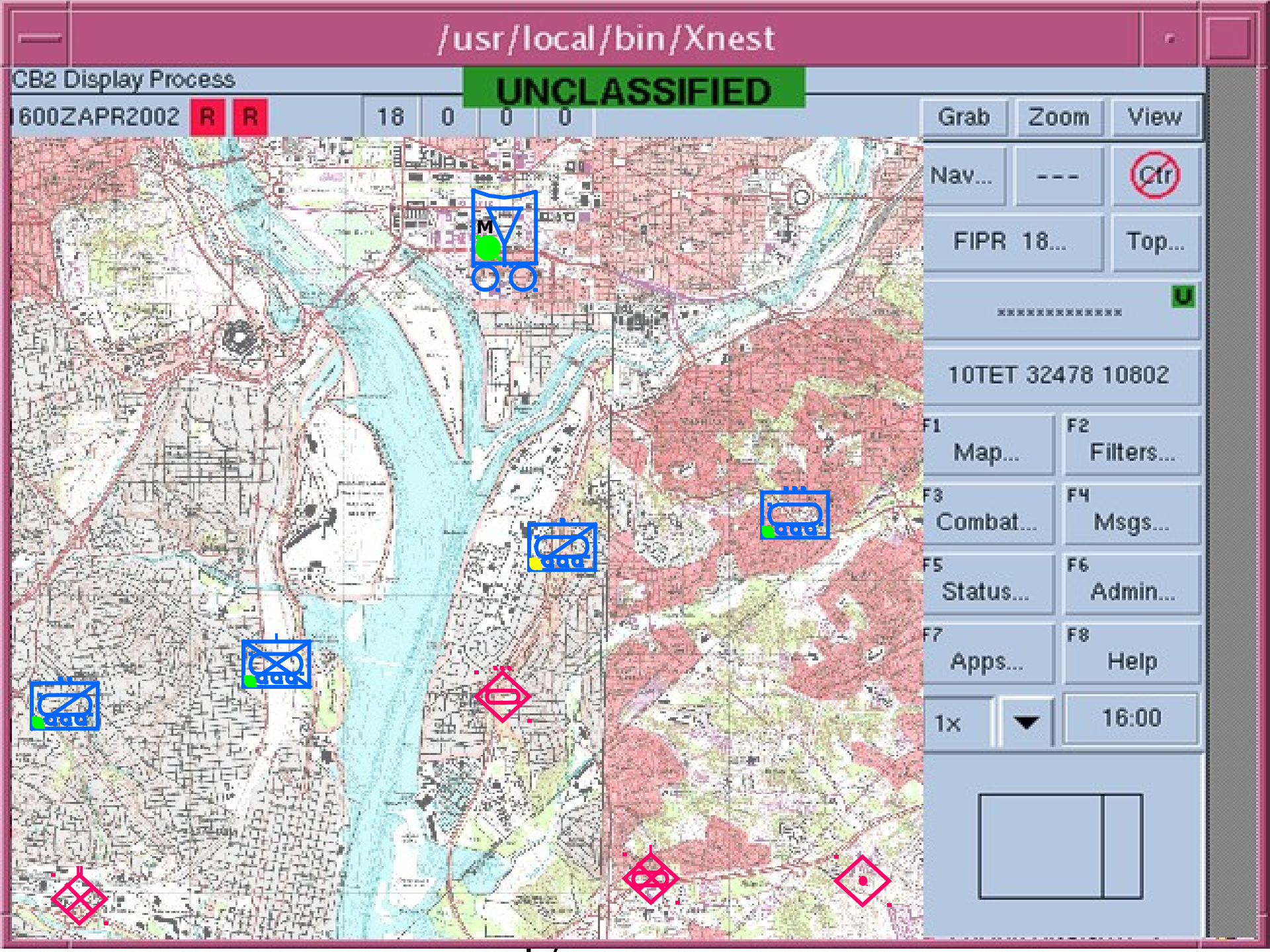


Tactical Commander's Use of Combat Status Information



Battalion Commander's Combat Status Display

- **On FBCB2 computer with duplicate screens shown on the plasma display.**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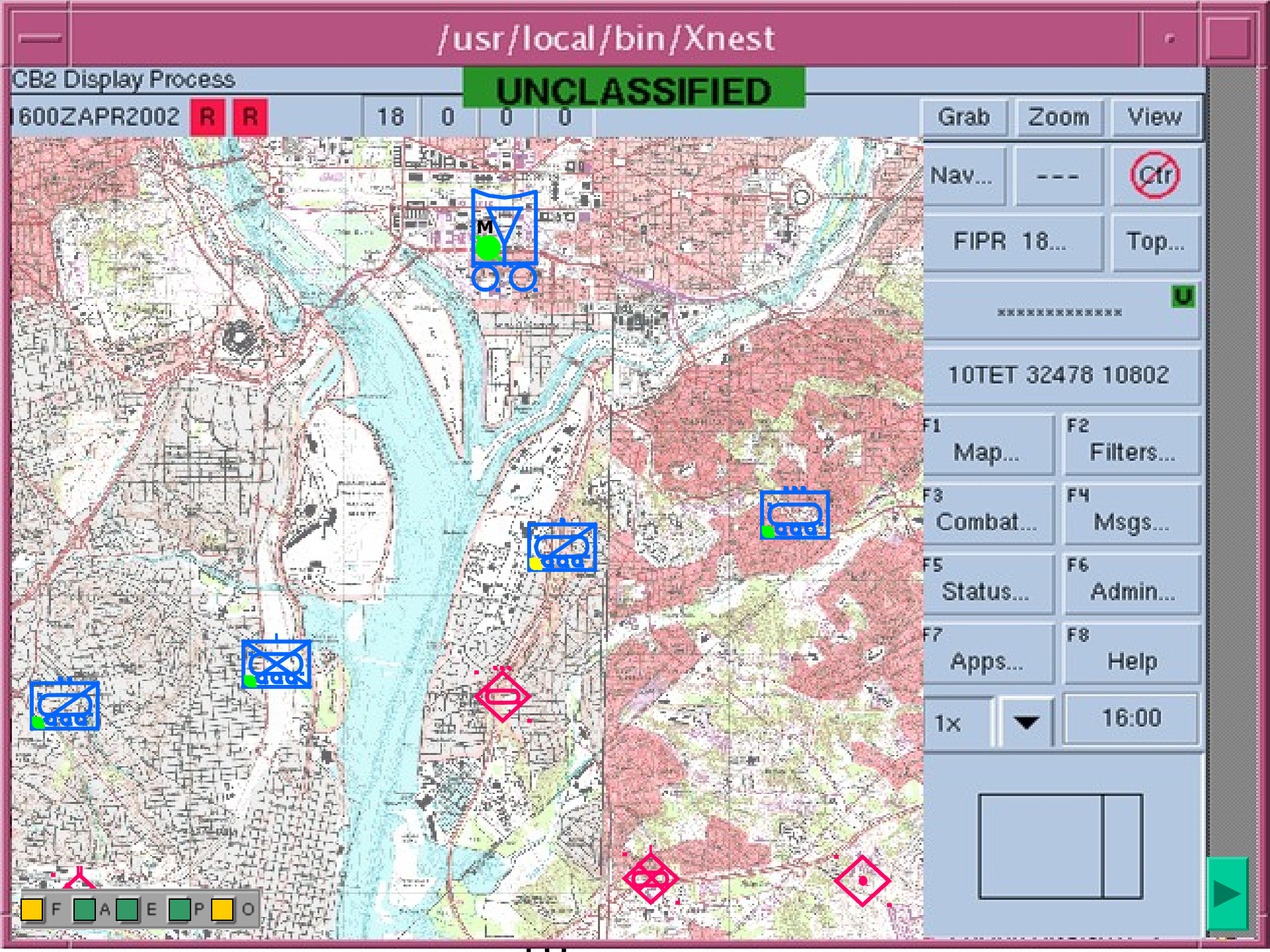
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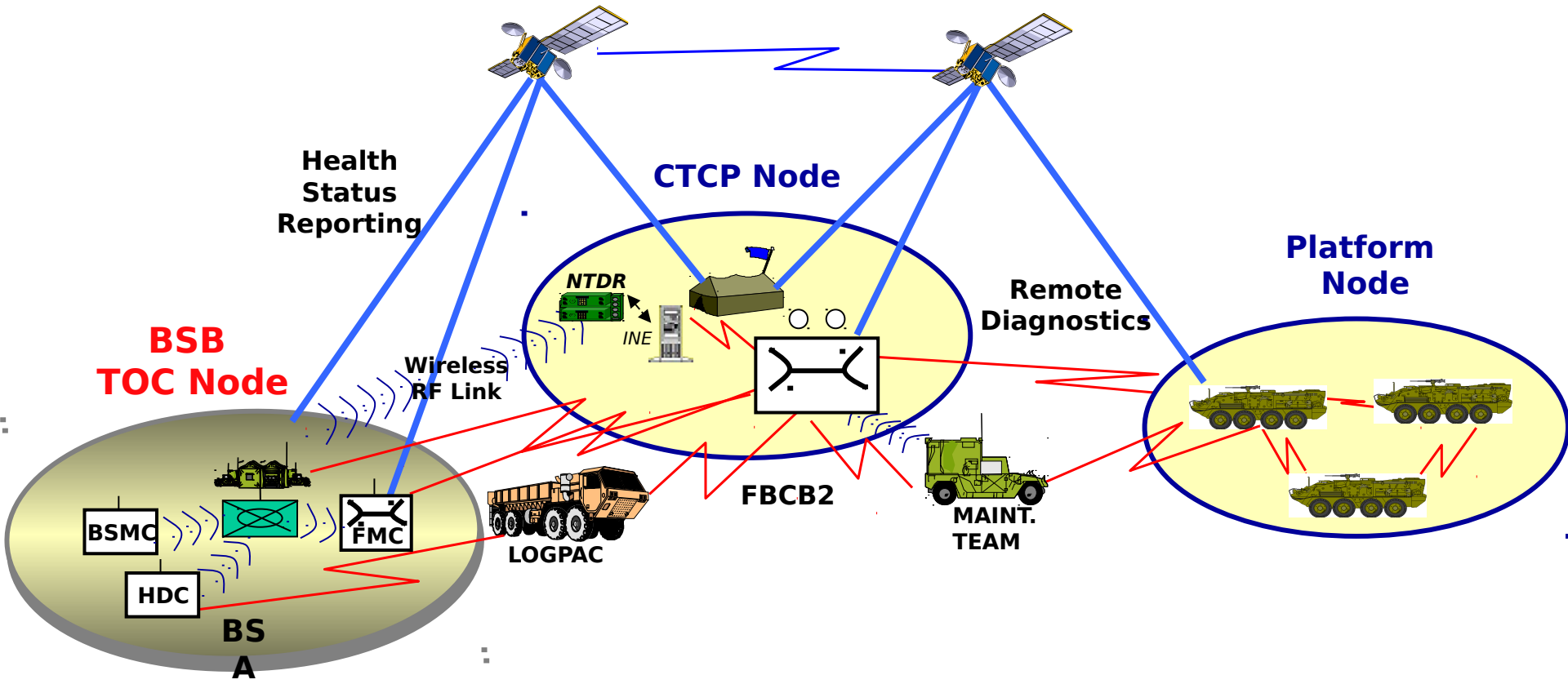
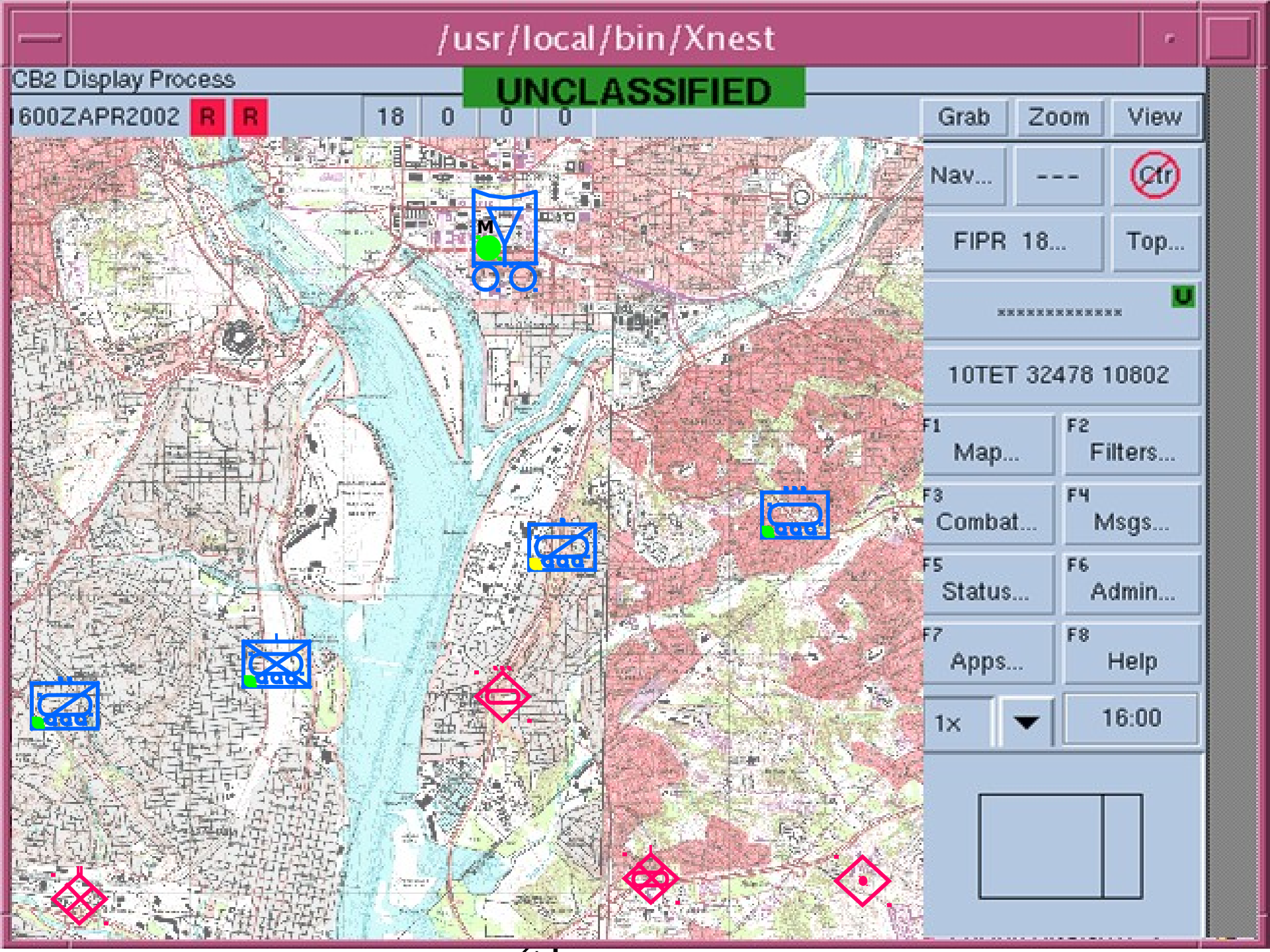
Support Operations Officer's Use of Combat Status Information



Support Operations Officers Combat Status Display

- **On FBCB2 Computer with duplicate screens on the plasma display.**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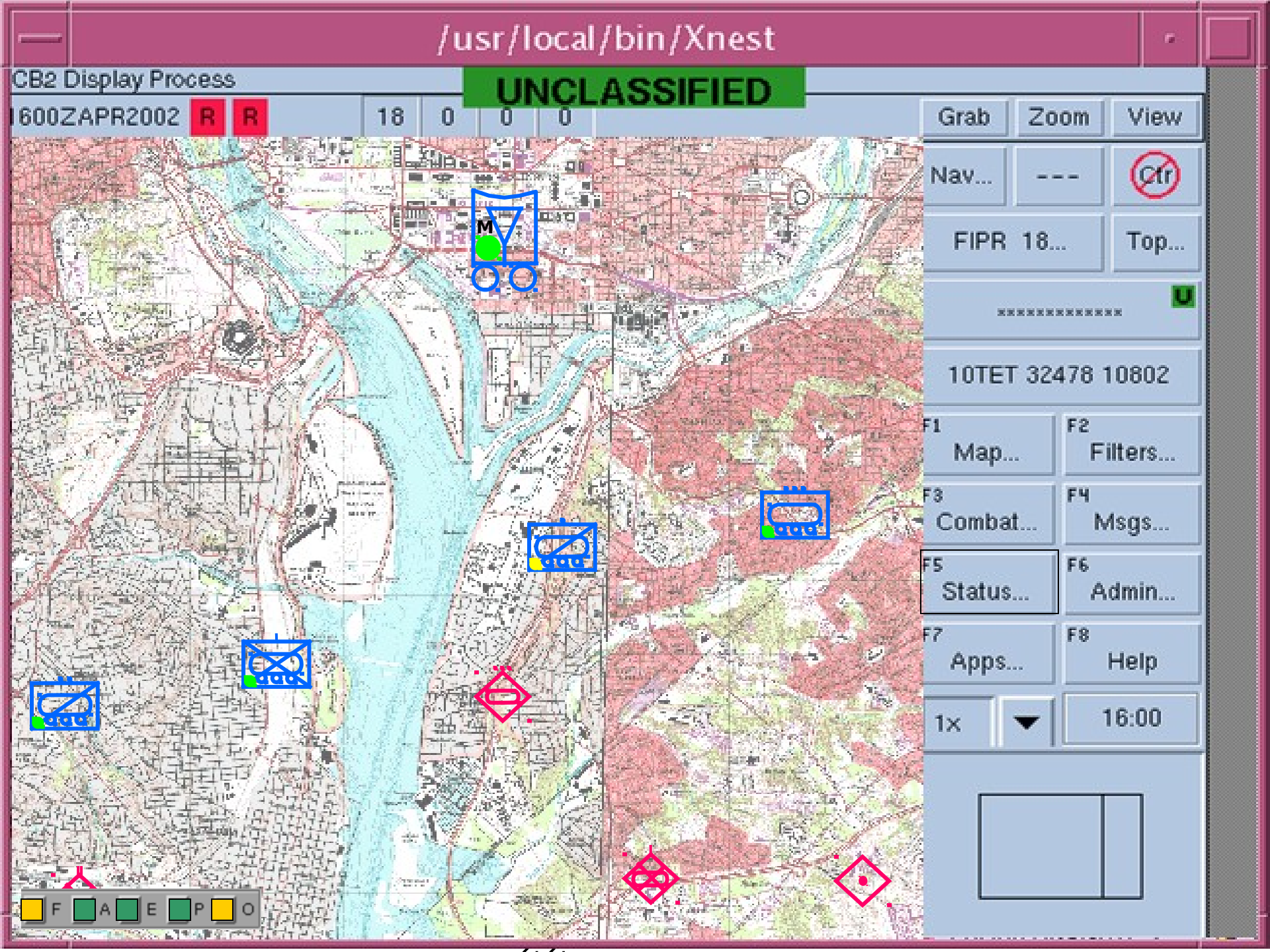
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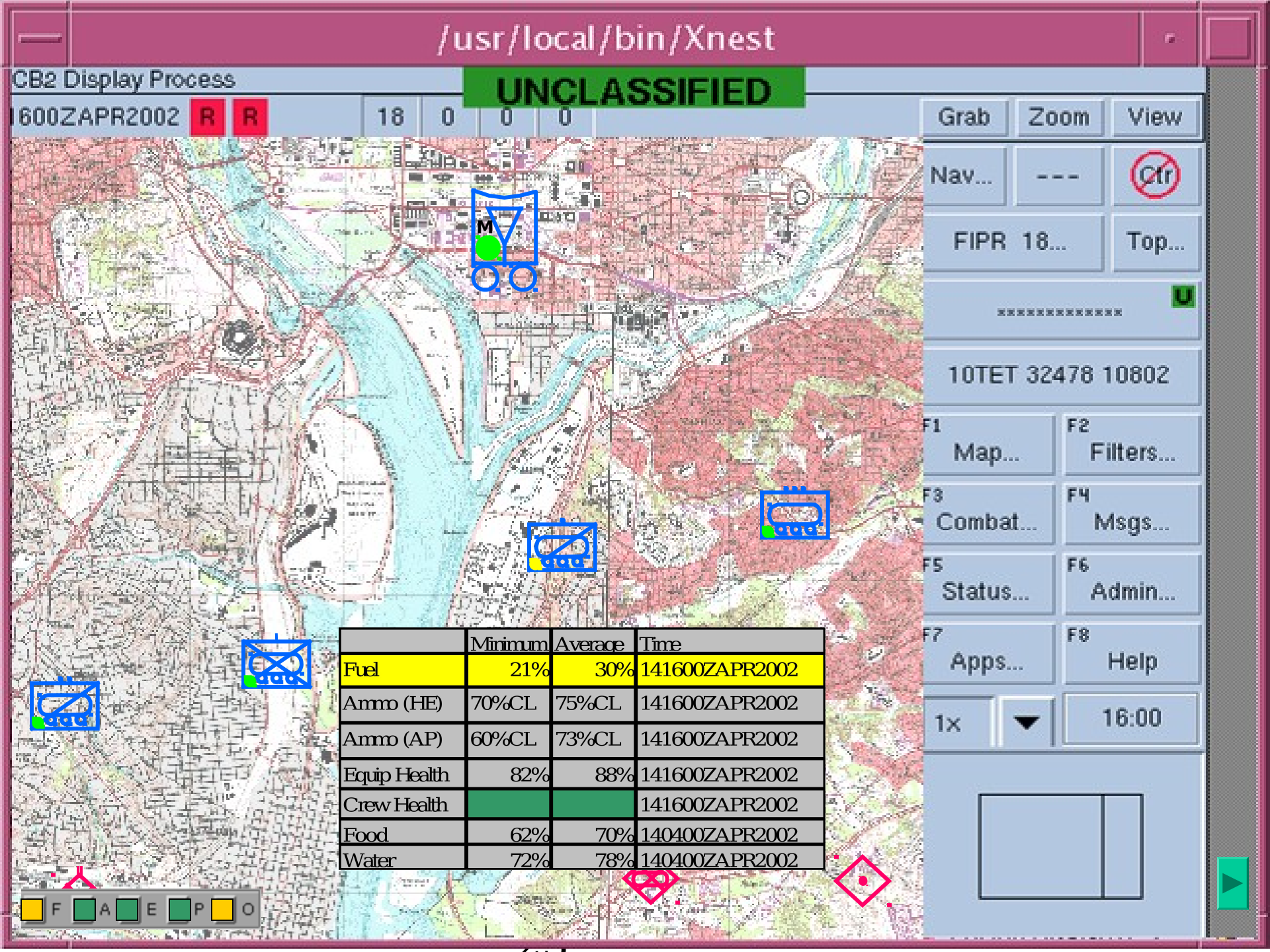


	Minimum	Average	Time
Fuel	21%	30%	141600ZAPR2002
Ammo (HE)	70%CL	75%CL	141600ZAPR2002
Ammo (AP)	60%CL	73%CL	141600ZAPR2002
Equip Health	82%	88%	141600ZAPR2002
Crew Health			141600ZAPR2002
Food	62%	70%	140400ZAPR2002
Water	72%	78%	140400ZAPR2002

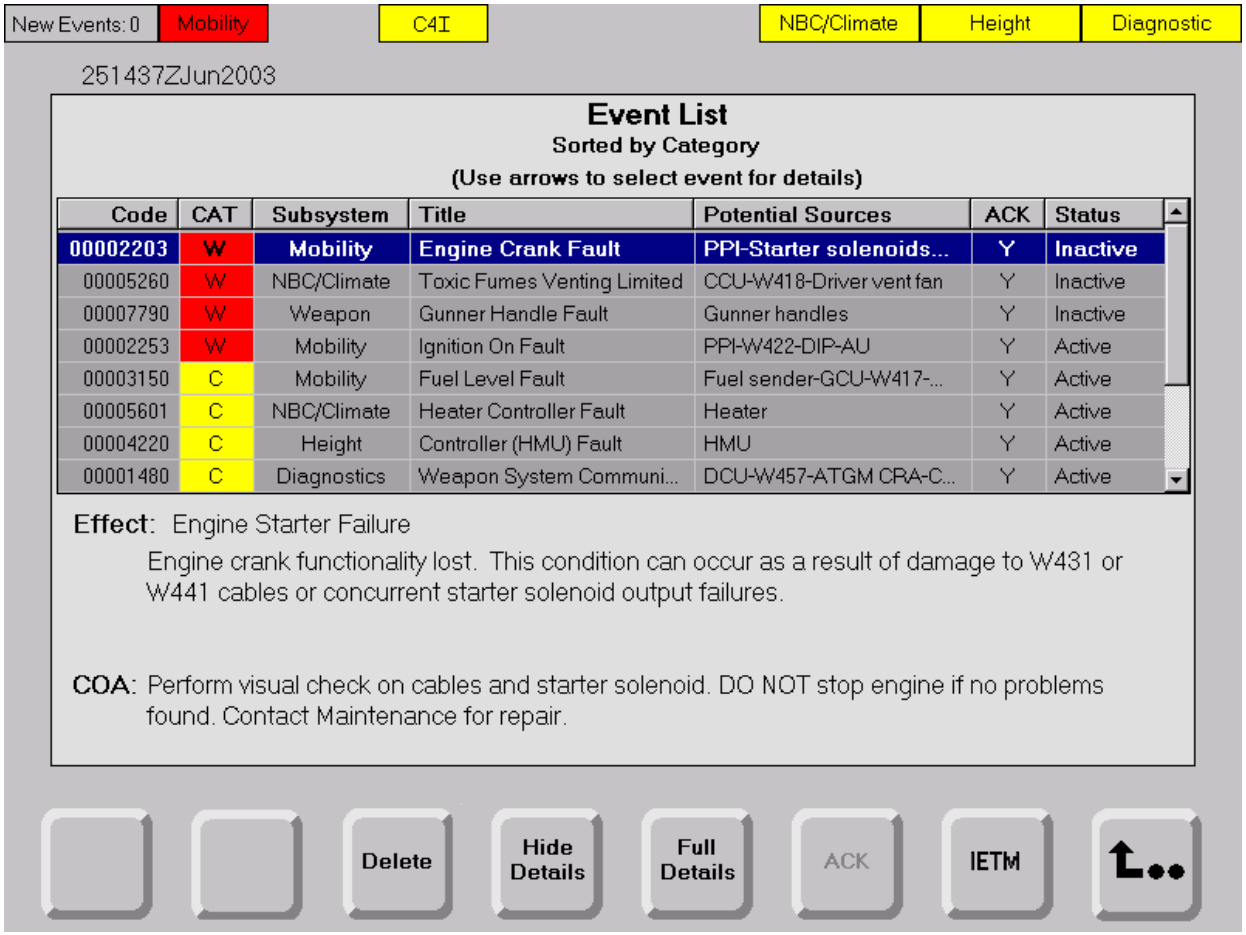
Overview of Fault Reporting Scenario on Stryker

- **Embedded Diagnostics System Detects Fault and Attempts to Isolate to a Single LRU**
- **If Embedded System Can Isolate the Fault, it Retrieves Part Number from On-Board IETM**
- **Embedded System Issues Alert to Crew and FBCB2**
- **FBCB2 Drafts Call for Support Containing Fault Description and Part Number**
- **Crew Reviews Information on Fault and Approves Draft Message**
- **Combat Repair Team Chief Receives Call For Support and Sends Contact Team with Part to Make Repairs**

Fault Generation/Detection

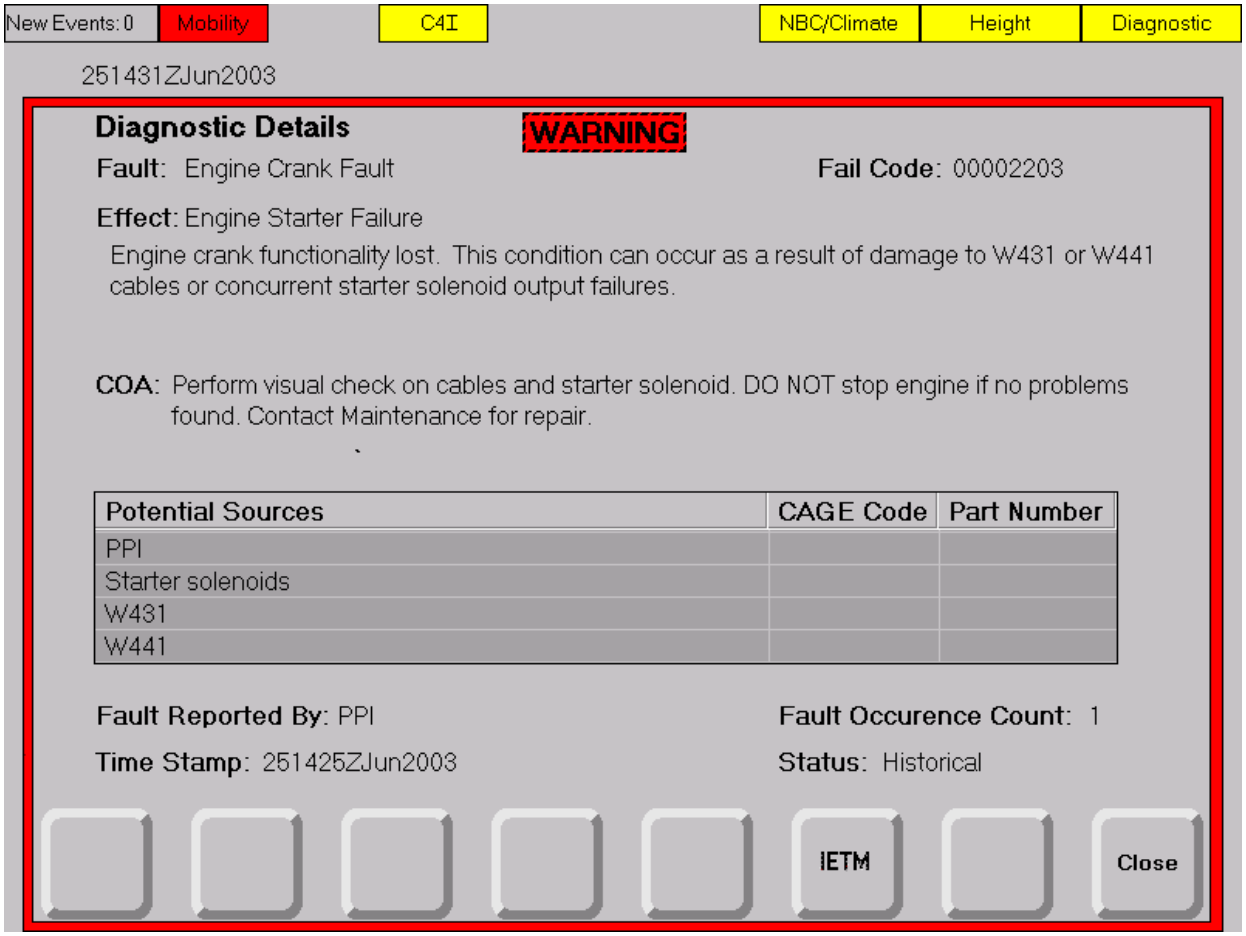
VDT Default Screen

VDT Event Log

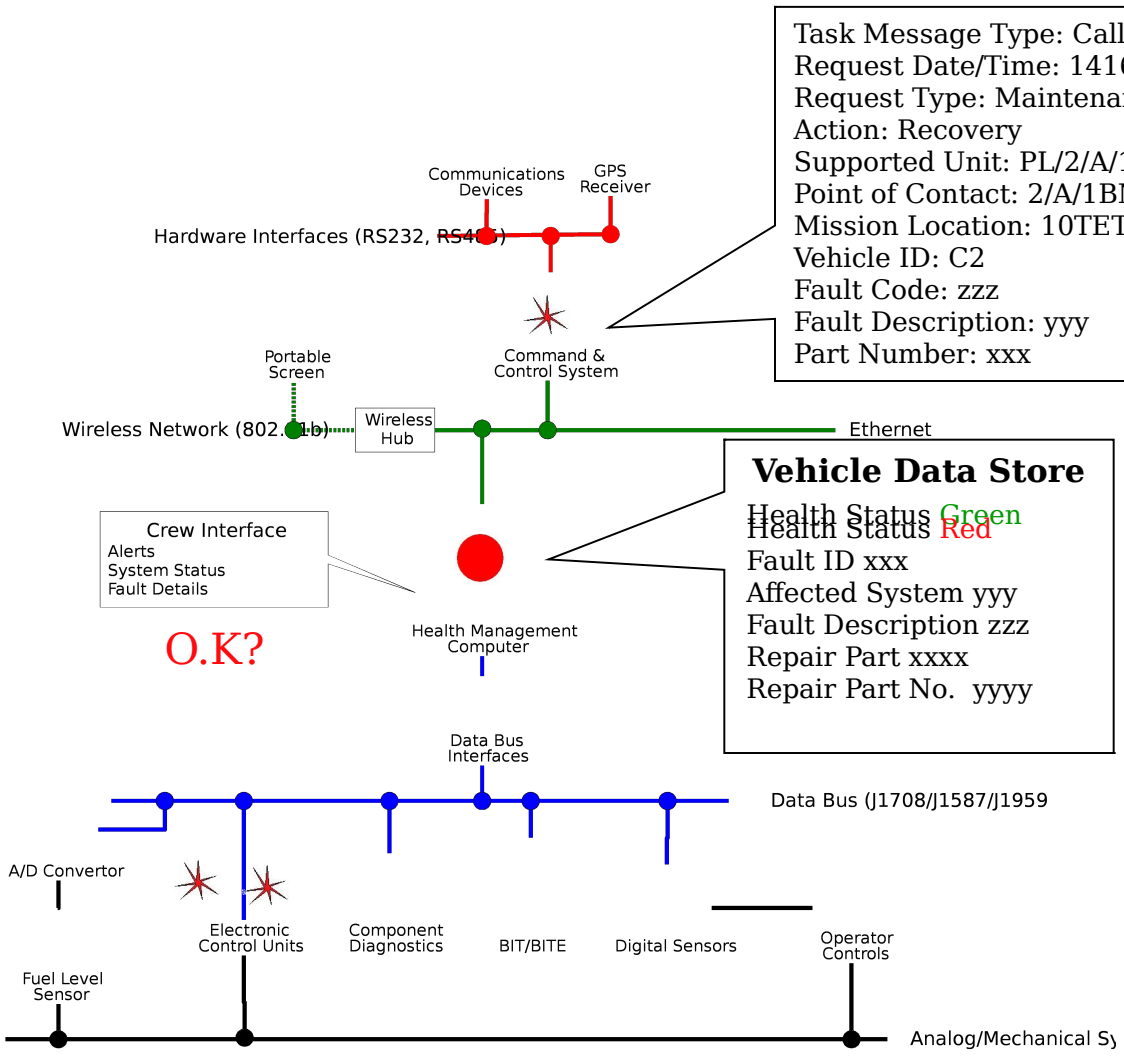


VDT Crew Alert

Diagnostic Details

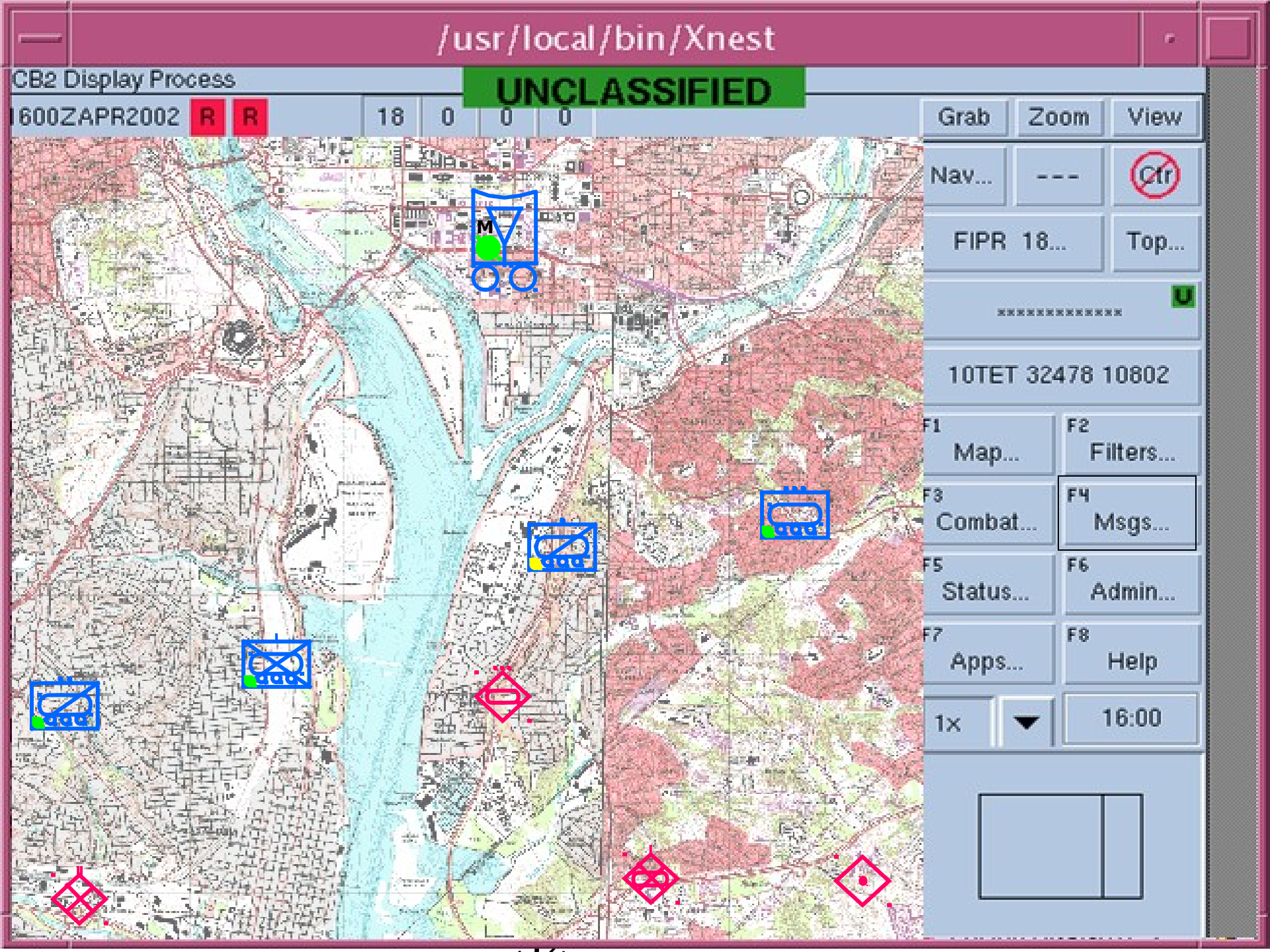


Creating Call for Support



Call for Support Response

- **On FBCB2**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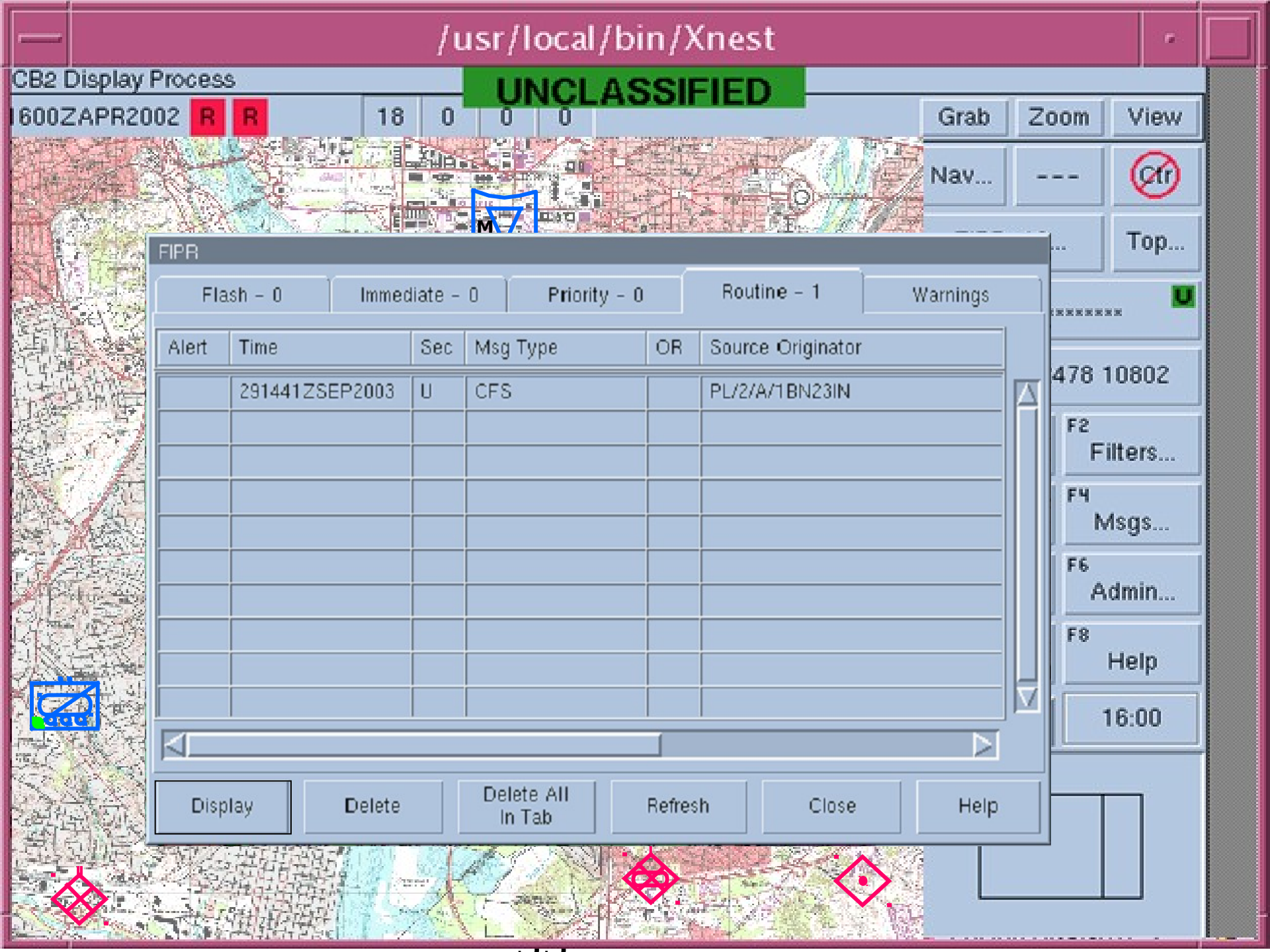
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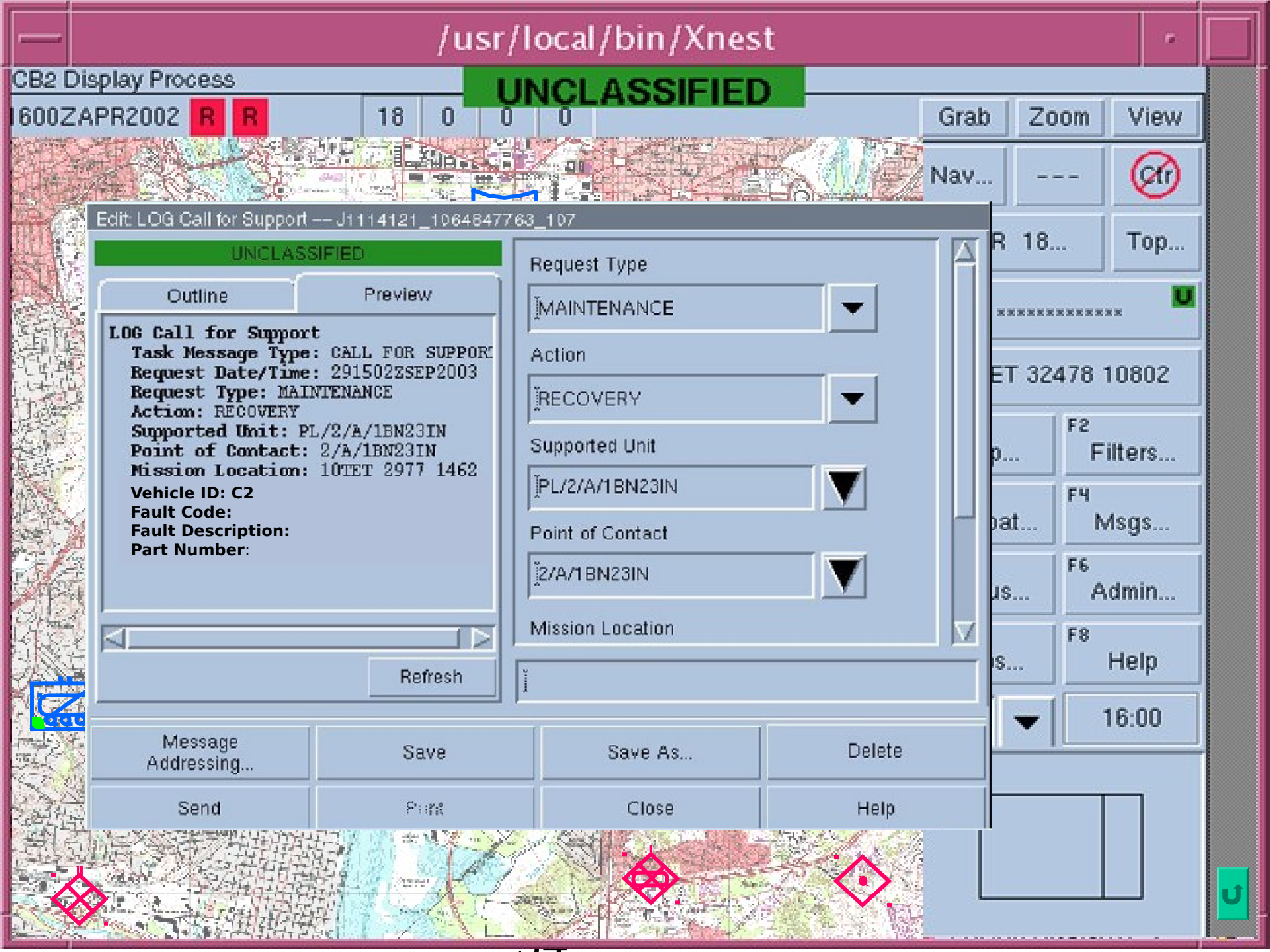
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LOG Call for Support
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Request Date/Time: 291502ZSEP2003
Request Type: MAINTENANCE
Action: RECOVERY
Supported Unit: PL/2/A/1BN23IN
Point of Contact: 2/A/1BN23IN
Mission Location: 10TET 2977 1462
Vehicle ID: C2
Fault Code:
Fault Description:
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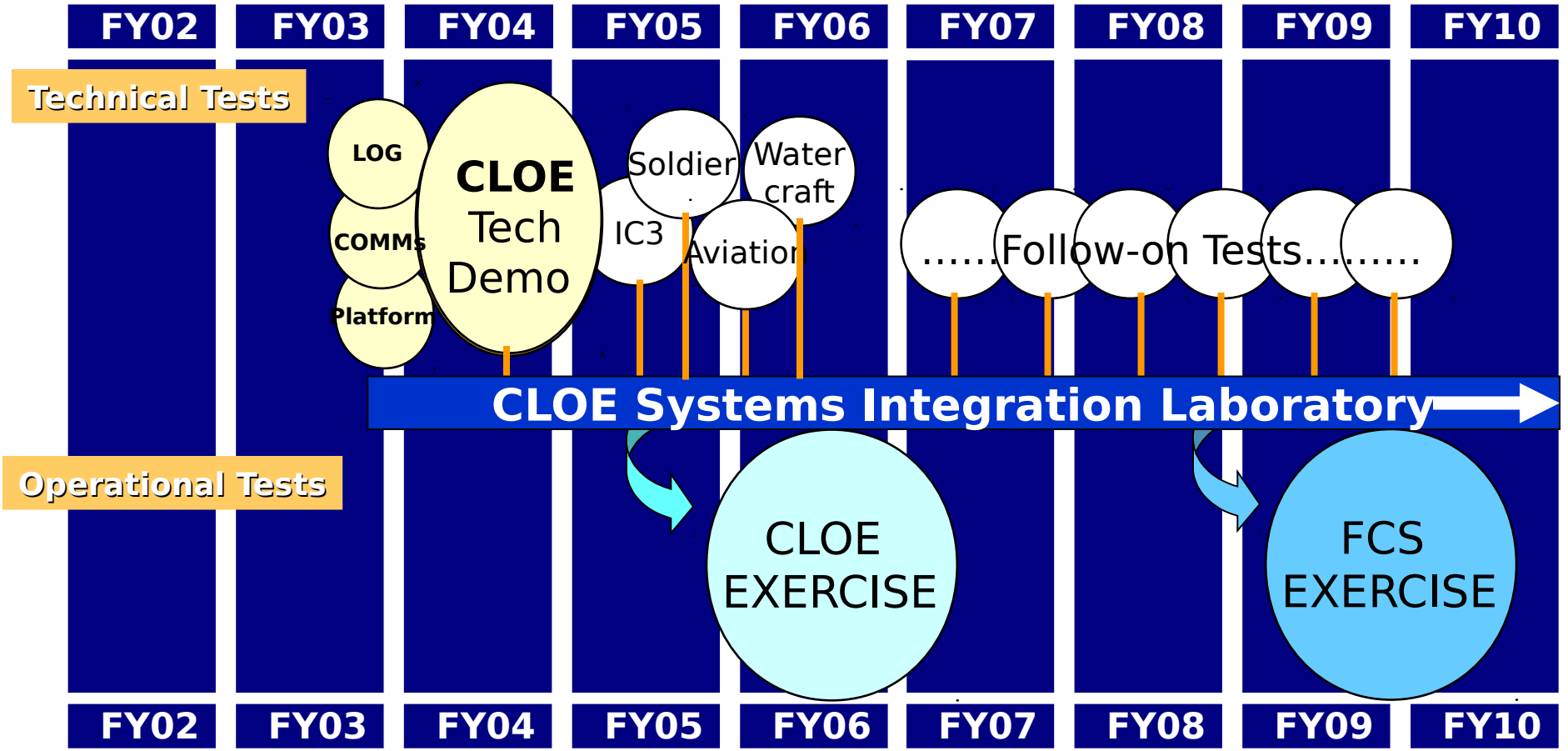
Overview of Tactical Wheeled Vehicle Scenario

- **Status and Fault Reporting Over MTS**
- **On-Board Health Monitoring, IETM**
- **Portable Terminal**
- **Remote Monitoring/Diagnostics**
- **Automated Cargo Tracking**
- **Predictive Maintenance**
- **Automated Archival Data Transfer**

Summary

- **Building Blocks for Self-Reporting/ Self-Diagnosing Platforms are Available**
- **CLOE Technical Demonstration Will Integrate Concepts, Doctrine, and Technology into a Working System**
- **Demo Architecture is the Foundation for the Army's Common Logistics Operating Environment**

What Happens After the Demo?




SUSTAINING THE TRANSFORMING ARMY- WHILE TRANSFORMING THE SUSTAINING ARMY
We Can’t Do It Without YOU